

MAR 02 2006

PATENT
450100-2922.2IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Yuka OIKAWA
Serial No. : 09/635,480
For : DIGITAL VIDEO SIGNAL REPRODUCING APPARATUS
WITH HIGH-SPEED PLAY MODE
Filed : August 8, 2000
Examiner : Huy Thanh Nguyen
Art Unit : 2615

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CLAIMS AS ALLOWED IN THIS REISSUE CONTINUATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The following is a listing of the claims, as amended, that are allowed in this application:

1. Apparatus for reproducing digital video signals from a magnetic tape, wherein a frame of digital video signals had been recorded in 2 m tracks (m is an integer greater than 1) when said magnetic tape was transported at a first speed, comprising:

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a pair of rotary heads having respectively different azimuth angles for scanning traces across said magnetic tape, [said heads being constructed either as a double azimuth head assembly or as a pair of heads angularly separated by 180° ,] said traces substantially coinciding with said tracks when said magnetic tape is transported at said first speed; and

[tape transport means] a tape transporter for transporting said magnetic tape at a second speed equal to $(m \times n \pm 1)$ times said first speed, where n is an integer other than zero, [$l=0.5$ when said pair of heads comprise said double azimuth head assembly and $l=0.25$ when said heads are angularly separated by 180°] and l has a predetermined value depending upon the arrangement of the heads relative to each other.

2. The apparatus of claim 1 wherein n is a positive number when said tape [transport means] transporter transports said magnetic tape in a forward direction and n is a negative number when said tape [transport means] transporter transports said magnetic tape in a reverse direction.

3. The apparatus of claim 1 wherein said digital video signals are NTSC video signals and $m=5$.

4. The apparatus of claim 1 wherein said digital video signals are PAL video signals and $m=6$.

[5. The apparatus of claim 1 wherein n is an odd integer when $l=0.25$.]

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6. The apparatus of claim 1 wherein the frame of digital video signals recorded in said 2 m tracks are orthogonally transformed video signals encoded in variable length code.

7. The apparatus of claim 6 wherein said variable length code is a two-dimension Huffman code.

8. The apparatus of claim 6 wherein the orthogonally transformed video signals of a frame are shuffled.

[9. Apparatus for reproducing digital video signals from a magnetic tape, wherein a frame of digital video signals had been recorded in 2 m tracks (m is an integer greater than 1) when said magnetic tape was transported at a first speed, each frame having been divided into blocks of picture elements and the blocks of a frame having been recorded in shuffled form with respect to each other, said apparatus exhibiting a data read-out rate and comprising: a pair of rotary heads angularly separated from each other by 180° and admitting of respectively different azimuth angles; and tape transport means for transporting said magnetic tape at a second speed equal to $(m \times n \pm 1)$ times said first speed, where n is an odd integer, $l=0.25$ when said apparatus exhibits a data read-out rate determined to be at least 50% and $l=0.125$ when said apparatus exhibits a data read-out rate determined to be less than 50%.]

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[10. The apparatus of claim 9 wherein n is a positive number when said tape transport means transports said magnetic tape in a forward direction and n is a negative number when said tape transport means transports said magnetic tape in a reverse direction.]

[11. The apparatus of claim 9 wherein said digital video signals are NTSC signals and $m=5$.]

[12. The apparatus of claim 9 wherein said digital video signals are PAL signals and $m=6$.]

[13. The apparatus of claim 9 wherein the frame of digital video signals recorded in said $2m$ tracks are orthogonally transformed video signals encoded in variable length code.]

[14. The apparatus of claim 13 wherein said variable length code is a two-dimension Huffman code.]

15. Apparatus for reproducing digital video signals from a magnetic tape, wherein a frame of digital video signals had been recorded in $2m$ tracks (m is an integer greater than 1) when said magnetic tape was transported at a recording speed, each frame having been divided into blocks of picture elements [and the blocks of a frame having been recorded in shuffled form with respect to each other,] said apparatus exhibiting a data read-out rate and comprising:

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a pair of rotary magnetic heads [disposed in a double azimuth head assembly and admitting of] having respectively different azimuth angles; and a tape [transport means] transporter for transporting said magnetic tape at a fast playback speed equal to $(m \times n \pm 1)$ times said recording speed, where n is an integer other than zero, [$l=0.5$ when said apparatus exhibits a data read-out rate determined to be at least 50% and $l=0.25$ when said apparatus exhibits data read-out rate determined to be less than 50%] and l is a value depending upon a data read-out rate.

16. The apparatus of claim 15 wherein n is a positive number when said tape [transport means] transporter transports said magnetic tape in a forward direction and n is a negative number when said [transport means] tape transporter transports said magnetic tape in a reverse direction.

17. The apparatus of claim 15 wherein said digital video signals are NTSC signals and $m=5$.


18. The apparatus of claim 15 wherein said digital video signals are PAL signals and $m=6$.

19. The apparatus of claim 15 wherein the frame of digital video signals recorded in said 2 m tracks are orthogonally transformed video signals encoded in variable length code.

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20. The apparatus of claim 19 wherein said variable length code is a two-dimension
Huffman code.

Respectfully submitted,
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